

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

These amendments introduce no new matter and support for the changes is replete throughout the specification, claims, and drawings as originally filed. Any changes made are without prejudice and are not to be construed as abandonment of any previously claimed subject matter or agreement with any objection or rejection of record.

In the Claims:

1. (previously presented) A recombinant plant viral vector comprising a polynucleotide, which polynucleotide comprises: an IRES nucleotide sequence, an ORF encoding a peptide of interest, and an ORF encoding a viral protein, wherein the IRES nucleotide sequence is located between the peptide of interest ORF and the viral protein ORF and wherein the IRES is heterologous to the plant viral vector.

2. (previously presented) The vector according to claim 1 wherein a promoter 5' to the IRES sequence, the peptide of interest ORF, and the viral protein ORF promotes transcription of a mRNA containing said polynucleotide.

3. (currently amended) The vector according to claim 2 wherein the IRES nucleotide sequence is a naturally occurring IRES ~~or a fragment of a naturally occurring IRES~~ that can direct translation of the peptide of interest ORF or the viral protein ORF.

4. (currently amended) The vector according to claim 2 wherein the IRES sequence comprises a nucleotide sequence of: SEQ ID NO: 1, ~~or a fragment of SEQ ID NO: 1~~ that can direct translation of the peptide of interest ORF or the viral protein ORF.

5. (previously presented) The vector according to claim 2 wherein the viral protein is a coat protein.

6. Cancelled.

7. (original) A recombinant virus comprising a recombinant viral vector according to claim 5.

8. (previously presented) A host comprising a recombinant virus according to claim 7.

9. (currently amended) An IRES capable of directing the expression of an internal ORF in a heterologous plant viral-based vector.

10. (original) An IRES according to claim 9 wherein the IRES is a IREScp.

11. (original) An IRES according to claim 10 wherein the IRES is crTMV IREScp.

12. (previously presented) A viral vector construct that expresses a bicistronic mRNA comprising an ORF positioned upstream of an IRES sequence and followed by a coat protein coding sequence, wherein the IRES sequence is heterologous to the viral vector and is capable of promoting internal initiation of translation of the coat protein coding sequence.

13. (original) A viral vector construct according to claim 12 wherein the ORF encodes a native or foreign gene.

14. (previously presented) A viral vector construct according to claim 53 wherein the reporter gene encodes a green fluorescent protein.

15. (previously presented) A viral vector construct, comprising: a viral genome, and an IRES sequence, wherein the IRES sequence is heterologous to the viral genome, wherein the

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IRES sequence is downstream of a desired gene or ORF and upstream of a virus coat protein gene, wherein the IRES sequence is in the sense or antisense orientation.

16. (original) A viral vector construct according to claim 15 wherein the viral vector construct expresses a bicistronic mRNA.

17. (original) A viral vector construct according to claim 15 wherein the viral genome is the genome of potato virus X.

18. (original) A potato virus X-based viral vector construct comprising the viral vector construct according to claim 15, wherein the potato virus X-based viral vector construct gives rise to single cell infection sites.

19. (previously presented) A viral vector construct according to claim 15 further comprising a stable stem loop structure inserted 5' of the IRES sequence.

20. (original) A viral vector construct according to claim 19 wherein the stem loop structure is immediately upstream of the IRES sequence.

21. (original) A viral vector construct according to claim 20 wherein the stem loop structure causes a reduction in the expression of the virus coat protein gene.

22. (original) A viral vector construct according to claim 21 wherein the stem loop structure interferes with direct interaction of a ribosome at the IRES sequence.

23. (previously presented) A viral vector construct according to claim 15 further comprising a stable stem loop structure inserted 3' of the IRES sequence.

24. (original) A viral vector construct according to claim 23 wherein the stem loop structure prevents expression of the virus coat protein gene.

25. (original) A viral vector construct according to claim 23 wherein the stem loop structure effectively blocks scanning ribosomes.

26. (previously presented) A viral vector comprising a natural or modified plant virus IRES sequence linked to an ORF encoding a protein of interest, wherein the plant virus IRES sequence directs translation of the ORF, wherein the protein of interest is heterologous to the viral vector and wherein the IRES sequence is heterologous to the viral vector.

27. (previously presented) A viral vector according to claim 26 wherein said IRES sequence initiates translation effectively in either sense or antisense orientation.

28. (previously presented) A viral vector according to claim 27 wherein said IRES sequence is an IREScp sequence.

29. (previously presented) A viral vector construct comprising the function of producing a bicistronic subgenomic RNA in which two ORFs are separated by an IRES and wherein the IRES is heterologous to the viral vector.

30. (previously presented) A recombinant plant viral vector construct comprising a modified IRES sequence that directs higher levels of protein expression, wherein the IRES sequence is heterologous to the viral vector.

31-37. (Cancelled).

38. (original) A polynucleotide comprising pIRESs-XCP.

39-52. (Cancelled).

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53. (previously presented) A viral vector construct according to Claim 12, further comprising a reporter gene.

54. (previously presented) A recombinant or isolated polynucleotide comprising: an IRES nucleotide sequence, an ORF encoding a peptide of interest, and an ORF encoding a viral protein, wherein the IRES nucleotide sequence is located between the peptide of interest ORF and the viral protein ORF and wherein the IRES nucleotide sequence is heterologous to the viral protein ORF.

55. (previously presented) The polynucleotide of claim 54, wherein one or more of the IRES nucleotide sequence or the viral protein ORF comprises a tobamovirus nucleotide sequence.

56. (previously presented) The polynucleotide of claim 55, wherein the tobamovirus comprises crTMV.